



Update on New Reference Frames

Dru Smith
Chief Geodesist

NOAA's National Geodetic Survey

Recent Updates...

- January 2015: NGAC briefing
- April 2015: Geospatial Summit
- June 2015: Today

Terminology (reminder)

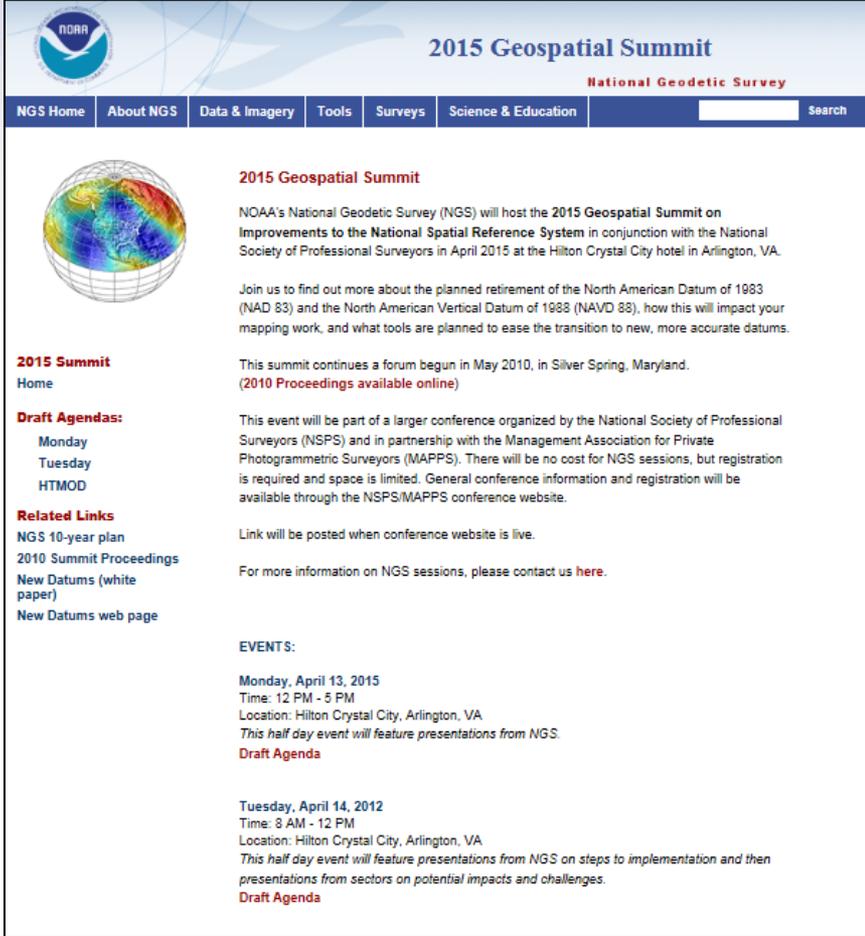
- ~~Horizontal Datum~~
 - Geometric Reference Frame
 - Geocentric X, Y, Z
 - Latitude, Longitude, Ellipsoid Height
- ~~Vertical Datum~~
 - Geopotential Reference Frame
 - Geoid undulation
 - Orthometric height
 - Gravity
 - Deflection of the Vertical

Since last you were briefed...

- NGS professional discussions on various technical issues
 - **Decision:** GRS-80 will continue as the ellipsoid in the new GeRF
 - **Decision:** Annual periodicity (glacial thaw/freeze) of the geoid will be averaged
 - i.e. there will be no “summer geoid” and “winter geoid” in Alaska
 - **Decision:** Massive (TBD) earthquakes will trigger a new airborne gravity survey
 - **Not yet decided:** Should the geoid rise (and orthometric heights shrink) as sea level rises?
 - **Not yet decided:** How much time dependency will users accept?

2015 Geospatial Summit

- April 13-14, 2015, in the Washington, DC Area
- As part of a broader “conference of conferences” with National Society of Professional Surveyors and Management Association for Private Photogrammetric Surveyors (MAPPS)
- Follows the successful 2010 Geospatial Summit. More info at the 2015 Geospatial Summit website.
- **200 in person / 100 online**
- **Live feedback polls**



2015 Geospatial Summit
National Geodetic Survey

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2015 Geospatial Summit

NOAA's National Geodetic Survey (NGS) will host the **2015 Geospatial Summit on Improvements to the National Spatial Reference System** in conjunction with the National Society of Professional Surveyors in April 2015 at the Hilton Crystal City hotel in Arlington, VA.

Join us to find out more about the planned retirement of the North American Datum of 1983 (NAD 83) and the North American Vertical Datum of 1988 (NAVD 88), how this will impact your mapping work, and what tools are planned to ease the transition to new, more accurate datums.

This summit continues a forum begun in May 2010, in Silver Spring, Maryland. ([2010 Proceedings available online](#))

This event will be part of a larger conference organized by the National Society of Professional Surveyors (NSPS) and in partnership with the Management Association for Private Photogrammetric Surveyors (MAPPS). There will be no cost for NGS sessions, but registration is required and space is limited. General conference information and registration will be available through the NSPS/MAPPS conference website.

Link will be posted when conference website is live.

For more information on NGS sessions, please contact us [here](#).

EVENTS:

Monday, April 13, 2015
Time: 12 PM - 5 PM
Location: Hilton Crystal City, Arlington, VA
This half day event will feature presentations from NGS.
[Draft Agenda](#)

Tuesday, April 14, 2015
Time: 8 AM - 12 PM
Location: Hilton Crystal City, Arlington, VA
This half day event will feature presentations from NGS on steps to implementation and then presentations from sectors on potential impacts and challenges.
[Draft Agenda](#)

2015 Summit Home

Draft Agendas:

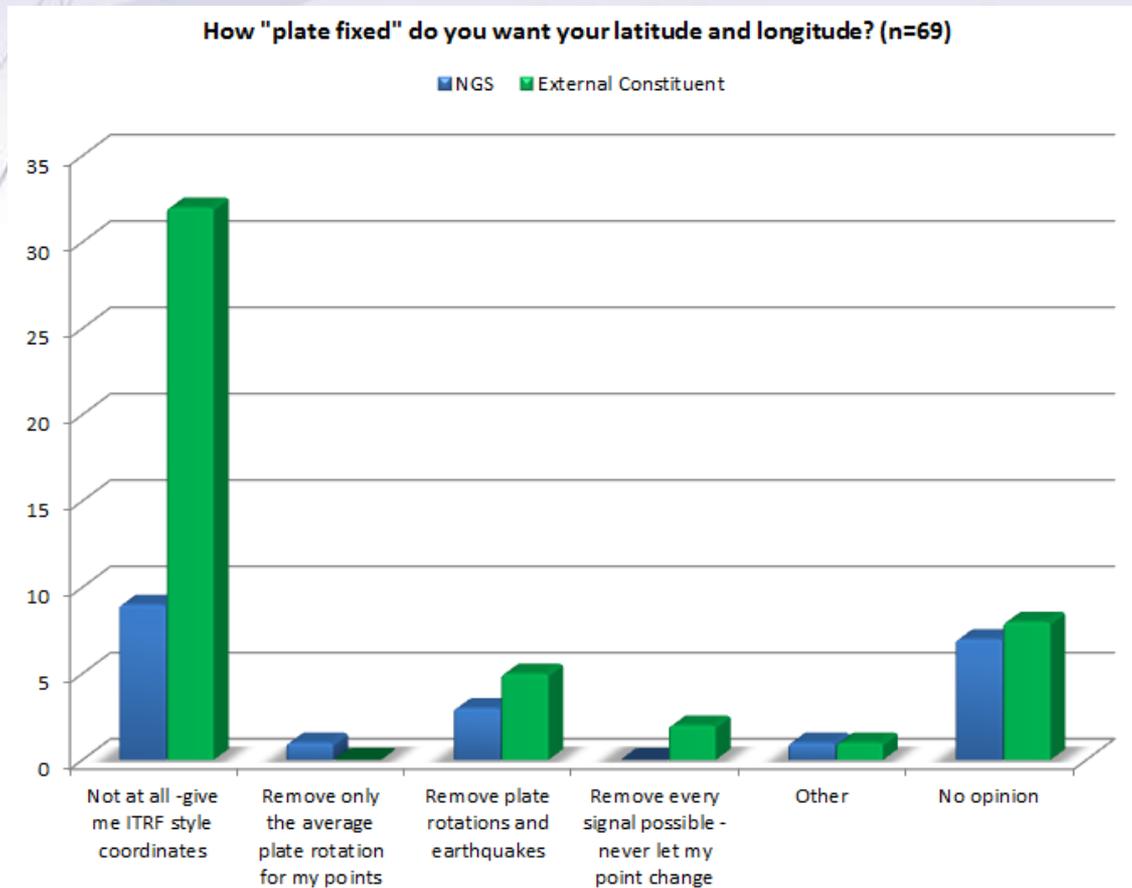
- Monday
- Tuesday
- HTMOD

Related Links

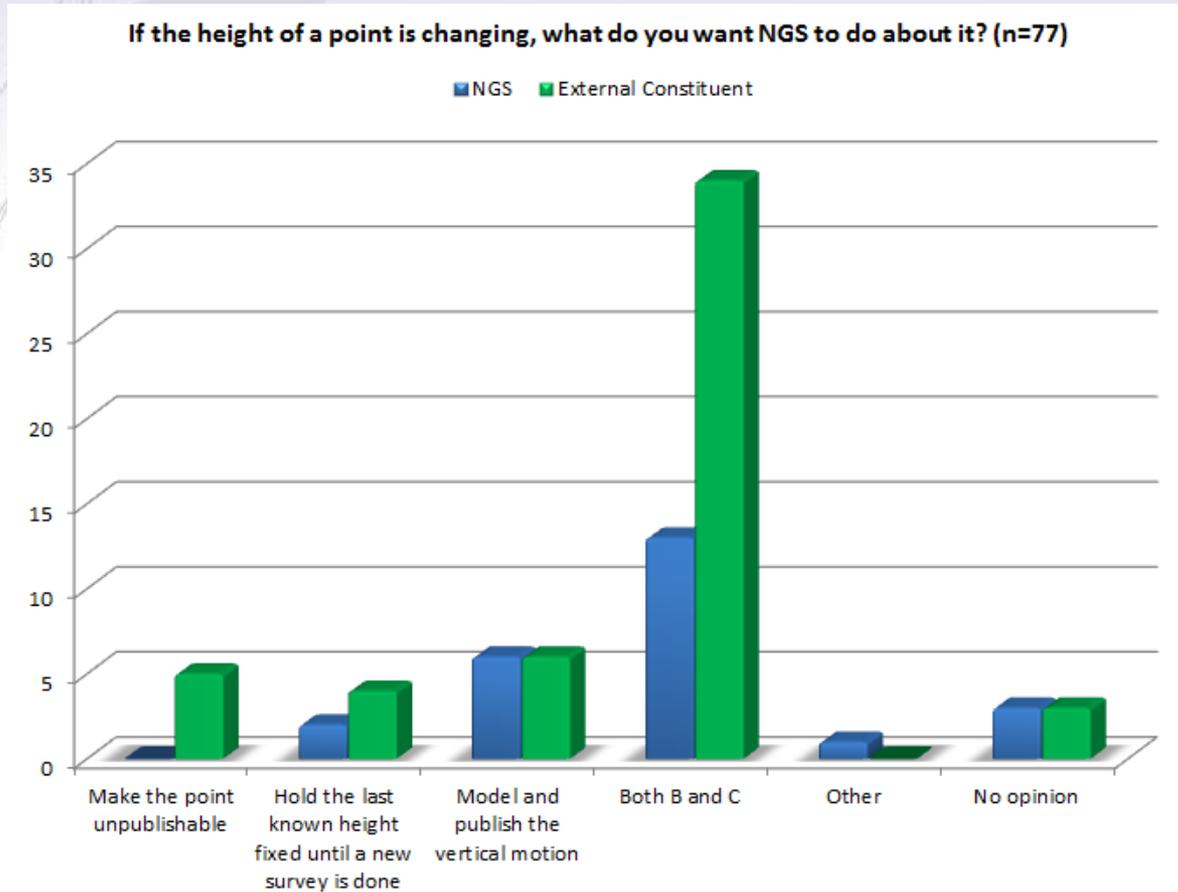
- [NGS 10-year plan](#)
- [2010 Summit Proceedings](#)
- [New Datums \(white paper\)](#)
- [New Datums web page](#)

<http://www.geodesy.noaa.gov/2015GeospatialSummit/>

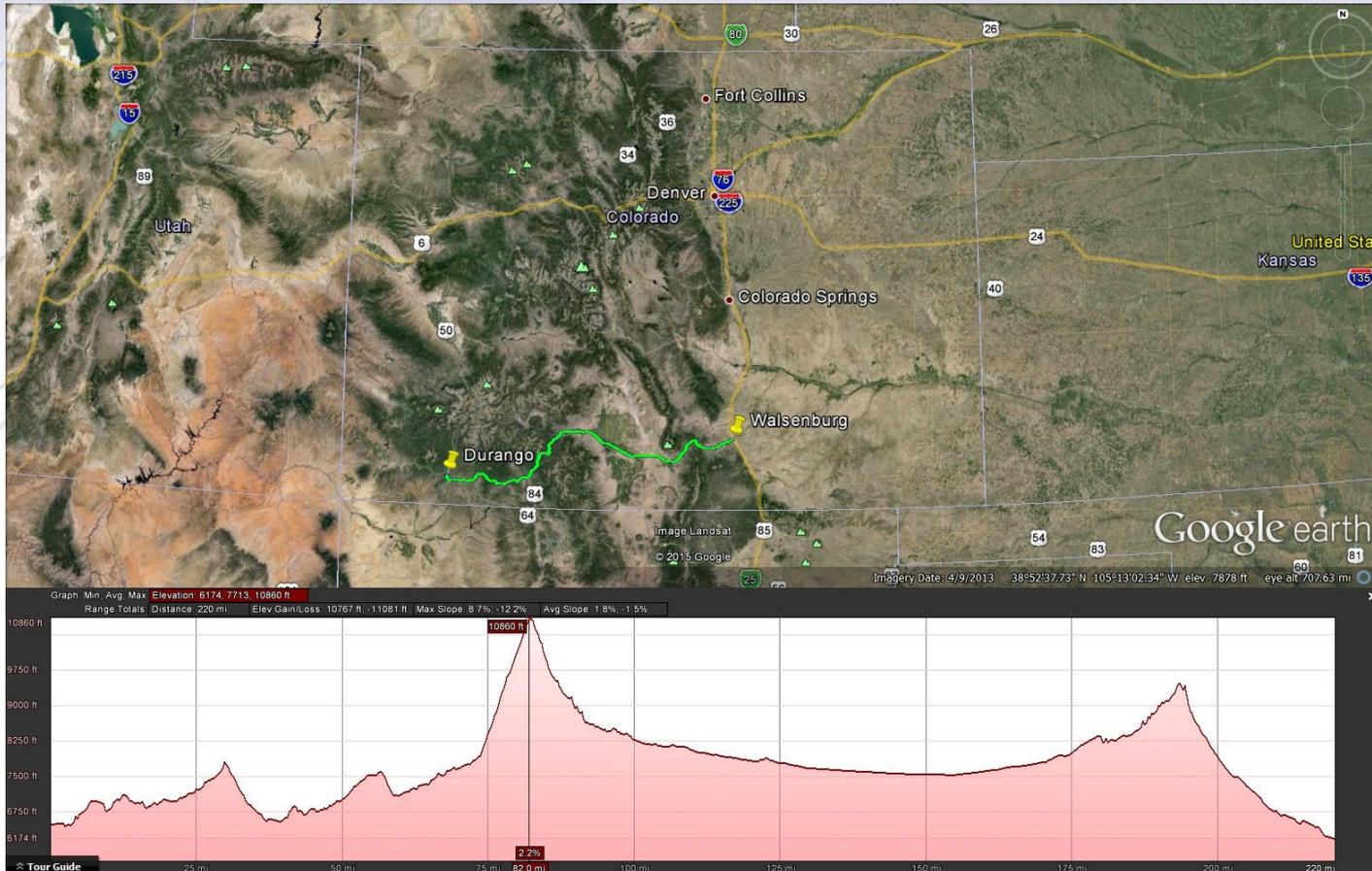
Time Dependency (horizontal)



Time Dependency (vertical)



GSVS 16



The final Geoid Slope Validation Survey (2016? 2017?) location was chosen: Durango to Walsenburg, CO

A taste of tools to come...

Options:

- Online point by point
- Upload and convert a whole file
- Web Services
- Download and Run locally

<http://beta.ngs.noaa.gov/gtkweb/>

The screenshot shows the NOAA Beta Coordinate Transformation web application. The browser address bar shows beta.ngs.noaa.gov/gtkweb/. The page title is "Coordinate Transformation" and it includes a "BETA" logo with the text "This is a BETA Release Site" and "National Geodetic Survey". The navigation menu includes "Home", "About NGS", "Data & Imagery", "Tools", "Surveys", "Science & Education", "Web services", and "Downloads".

The main content area is titled "Choose a location to generate projected coordinates" and offers two input methods: "Enter decimal degrees" and "or drag map marker". The "Enter decimal degrees" section has input fields for Latitude (37.393300000) and Longitude (-92.459040000). The "or degrees-minutes-seconds" section has dropdown menus for hemisphere (N) and direction (W), and input fields for degrees, minutes, and seconds (37-23-35.880000 and 092-27-32.544000). A map of the Springfield, Missouri area is shown with a red location pin.

Below the input fields, there is a section for "Enter an Ellipsoid Height" (0.000) and "Choose a datum" (NAD83 selected, NAD27 unselected). A "Convert" button is located below these options.

The "Projected Coordinates" table is displayed below the "Convert" button. It has columns for SPC, UTM (m), XYZ (m), and USNG. The SPC column contains a dropdown menu with "MO C-2402" selected. The UTM (m) column has sub-headers for Zone, Northing (m), Northing (usft), Northing (ift), Easting (m), Easting (usft), Easting (ift), Convergence, Scale Factor, and Combined Factor. The XYZ (m) column has sub-headers for X, Y, and Z. The USNG column is currently empty.

At the bottom of the page, there is a small note: "You may change the default SPC zone, datum, or ellipsoid height. These changes are processed interactively once a lat-long is converted; no need to click the Convert button."

Legal Issues

- NGS and NSPS joint effort
- 48 states have legislated the words “NAD 83”
- Move to generic text: “Most recent coordinates in the National Spatial Reference System”

A website for updates

New Datums
National Geodetic Survey

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June 5, 2015

Replacing NAVD 88 and NAD 83
NAD 83 and NAVD 88 will be replaced in 2022, and there are many related projects to make sure the transition goes smoothly. Read the **NGS Ten-Year Plan** to learn more and continue to visit this web-page for more information.

FAQs
frequently asked questions

NGS 2015 Geospatial Summit

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Events
2015 Summit
2010 Summit

What to Expect | **Get Prepared**
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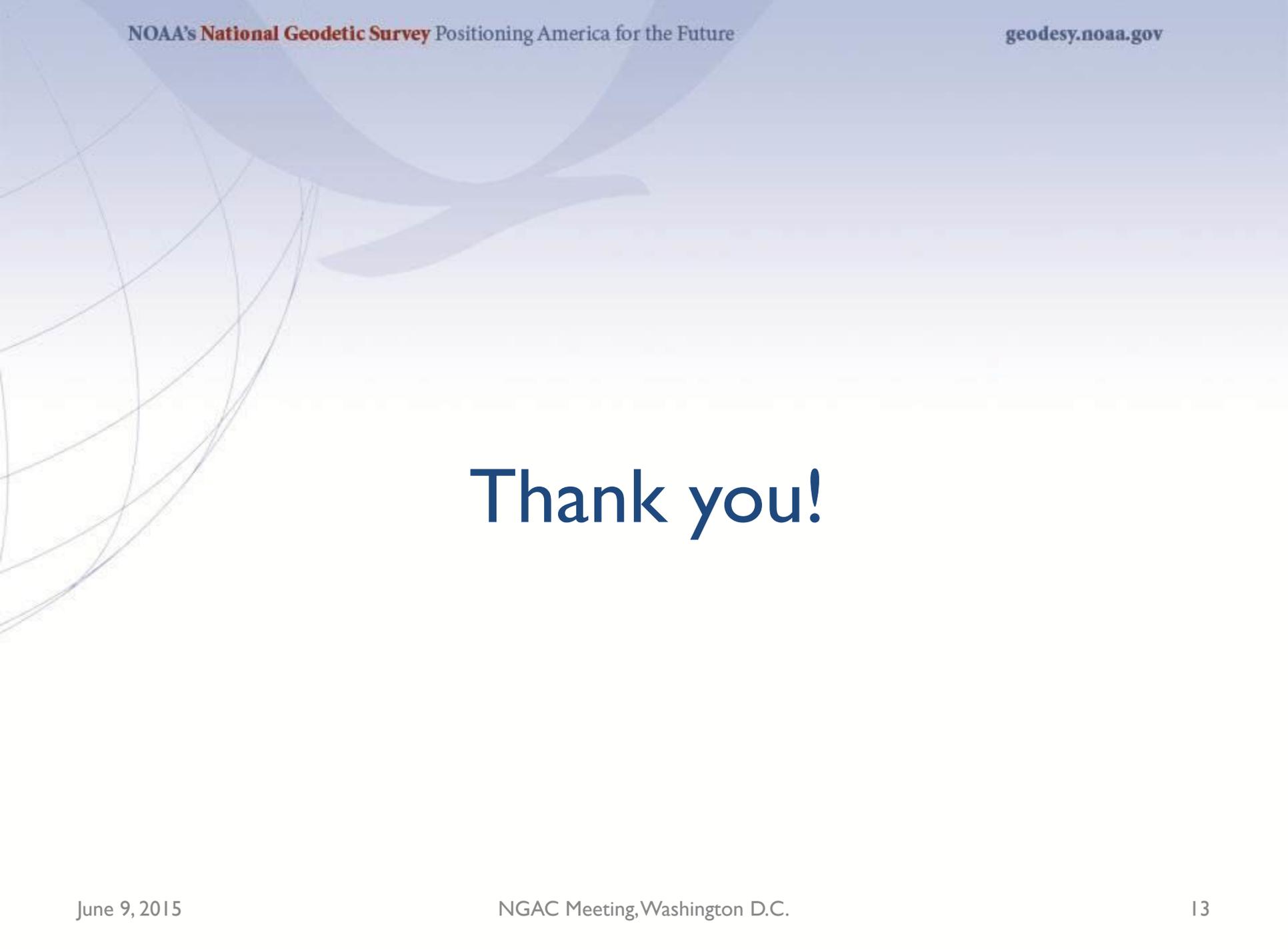
Why is NGS replacing NAD 83 and NAVD 88?
NAD 83 and NAVD 88, although still the official horizontal and vertical datums of the National Spatial Reference System (NSRS), have been identified as having shortcomings that are best addressed through defining new horizontal and vertical datums.

Specifically, NAD 83 is non-geocentric by about 2.2 meters. Secondly, NAVD 88 is both biased (by about one-half meter) and tilted (about 1 meter coast to coast) relative to the best global geoid models available today. Both of these issues derive from the fact that both datums were defined primary using terrestrial surveying techniques at passive geodetic survey marks. This network of survey marks deteriorate over time (both through unchecked physical movement and simple removal), and resources are not available to maintain them.

<http://www.geodesy.noaa.gov/datums/newdatums/index.shtml>

NGS Webinar Series

- Began May 14, 2015
- An expansion of the monthly presentations sponsored by the National Height Modernization Program.
- Visit the Webinar Series Web-site to register, sign up to receive monthly webinar notices, and learn more:
http://www.ngs.noaa.gov/web/science_edu/webinar_series/.



Thank you!